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Firm Dynamics: Employment Dynamics Arising from Firm Growth and Contraction in Canada, 2001 to 2009

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Statistics Canada
Economic Analysis Division

Firm Dynamics: Employment Dynamics Arising from Firm Growth and Contraction in Canada, 2001 to 2009

Anne-Marie Rollin

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Symbols

The following standard symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0^s	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
^{p}	preliminary
^{r}	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
^{E}	use with caution
F	too unreliable to be published
*	significantly different from reference category ($p < 0.05$)

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Abstract

This paper looks at annual changes in Canadian business sector employment from 2001 to 2009. This period encompasses an expansionary phase (2001 to 2008), followed by a recession (2008/2009). Firm-level data are used to decompose yearly net employment change into gross employment creation and destruction, which makes it possible to measure the size of total annual employment reallocation. These measures of employment turnover are compared across industries and firm size classes.

More studies related to industrial dynamics and to labour market dynamics are available in Update on Economical analysis (www.statcan.gc.ca/economicanalysis).

Executive summary

After 2000, the Canadian economy enjoyed solid sustained growth until it entered a recession at the end of 2008. Between 2001 and 2008, employment in the business sector grew at an average annual rate of 1.8%. But in 2009, as a result of the worldwide financial crisis, Canadian business-sector employment fell 3.2%.

However, the net employment change hides the amount of labour market churning that continuously takes place as some firms contract, even in periods of growth, and other firms expand, even during recessions. A richer picture is provided by an examination of the role played by firm births, growing and declining firms, and firm exits during each year of expansion and recession.

With firm-level employment data, this paper provides an overview of the extent of the changes underlying the net employment numbers. Annual net employment changes are decomposed into gross employment creation and gross employment destruction, which allows the measurement of employment reallocation and excess employment reallocation, overall and by industry and by firm size class. Trends in shares of employment across industries and across firm size classes are also examined.

Several conclusions emerge about the 2001-to-2009 period in Canada:

- As in other countries, the amount of employment creation and destruction far exceeded net employment growth.
- Also similar to other countries, employment destruction was more sensitive to business cycles than was employment creation.
- As in the United States, there has been a downward trend in annual rates of employment creation, destruction, and reallocation.
- Continuing firms that were expanding were responsible for more employment creation than were entrants. Continuing firms that were shrinking were responsible for more employment destruction than were exits, even during the 2008/2009 recession.
- Because of substantial volatility in the net employment growth of large firms over the business cycle, the relative contribution of small and large firms to net employment growth fluctuated each year.
- The share of employment in firms with fewer than 50 employees increased slightly at the expense of medium-sized firms (100 to less than 500 employees).
- The average size of firms declined, as did the size of births and exits.

1 Introduction

The net number of jobs created or destroyed in an economy—the indicator that makes headlines—is the outcome of growth in some firms and decline in others. These employment flows are hidden behind the net employment growth figure and provide a more nuanced picture of what is happening in the labour market—for example, whether the disappearance of existing jobs or lack of employment creation is driving down net employment growth. An analysis of the types of firms (e.g., small or large) in which employment is fluctuating most at a particular time increases our understanding of the forces behind trends in net employment growth.

In their study of employment flows in American manufacturing from 1973 to 1988 (a period marked by three recessions in the U.S.), Davis *et al.* (1996) made several key observations. First, they noted that rates of employment creation and destruction were much larger than the net employment growth rate, a pattern that prevails in many countries and across different industries and firm size classes (Haltiwanger *et al.* 2010; Baldwin 1995). Second, employment destruction is more cyclical than employment creation—during recessions, the intensification of employment destruction is typically larger than the deceleration of employment creation. Third, their analysis by firm size revealed that both employment creation and destruction rates are higher in small firms than in large firms.

Most of the work on employment flows in Canada was done in the 1990s and focused on the manufacturing sector (Baldwin and Gorecki 1990; Baldwin 1995; Baldwin and Picot 1995; Baldwin *et al.* 1998). The properties of U.S. employment flows as described by Davis *et al.* (1996) also prevailed in Canada (Baldwin *et al.* 1998; Baldwin and Picot 1995). A more recent study of Canadian employment creation and destruction was conducted by Balakrishnan (2008), but it presented data only up to 2004. An update is warranted as the second half of the decade saw both a peak and a trough in the business cycle. From 2001 to September 2008, the Canadian economy continued to expand. However, in October 2008, both employment and output began to decline, bottoming out in mid-2009 (Cross 2011).

This report addresses two main questions. First, what were recent employment flow patterns in Canada and did noticeable trends emerge over the last decade? Second, which types of firms were most affected by the 2008/2009 recession?

Such an examination of employment flows requires longitudinal microdata that track the employment level of firms over time. This paper uses data from Statistics Canada's Longitudinal Employment Analysis Program (LEAP) to analyze annual employment dynamics in the Canadian business sector from 2001 to 2009, specifically, during the 2001-to-2008 expansion and during the 2008/2009 recession. Because of positive employment growth between 2007 and 2008 when measured on an annual basis, 2008 is defined as part of the expansionary period.

Net employment growth is decomposed into gross employment creation and destruction, in order to measure the extent of employment reallocation and employment churning. These employment flow measures are presented for the business sector as a whole, and by industry and by firm size class.

2 Data and methodology

The information in the LEAP database is generated from the annual statements of remuneration paid (T4 slips) that Canadian businesses are required to issue to their employees if remuneration exceeds $500, or if they made payroll deductions such as for income tax, Canadian Pension Plan or Employment Insurance. LEAP covers incorporated and unincorporated businesses that issue at least one T4 slip in any given calendar year. The employment level of these businesses is measured and tracked on an annual basis.

Employment data in LEAP are available as average labour units (ALUs) or as individual labour units (ILUs). ALUs are calculated by dividing a firm's annual payroll by the average annual earnings of a typical worker in the firm's industry, province and size class. These average annual earnings are derived from Statistics Canada's monthly Survey of Employment, Payrolls and Hours. Whether a firm's ALU measure rises or falls from year to year depends on the changes in the firm's practices (number of workers, hourly wages and average hours offered per worker) and on the trend in average earnings in the firm's industry, province, and size class (the group's annual average earnings, which is a function of wage and hours). ALU-based employment in firms that pay lower wages is generally less than a head-count measure of employment, such as the ILU, which is the total number of individuals issued a T4 slip. If individuals are issued more than one T4 slip, their one ILU is assigned to employers in proportion to the wages received from those employers. This analysis uses the ALU because it captures both employment level and quality as measured by relative wages paid and hours worked.

The population of firms varies over time as a result of firm births and exits, and also, mergers and acquisitions (M&A). When a firm buys or sells some of its plants to another firm, the employment levels of these two firms change from one year to the next partly because of the ownership change. Changes in employment recorded in LEAP are adjusted for some M&A transactions, specifically, births and exits attributable to M&A activity.[1] Labour-tracking is used to examine all births and exits in order to delete firm appearances and disappearances that result from mergers or divestitures (Baldwin *et al.* 1992). When false births or exits are identified, the firm's structure in the year the transaction occurs is applied to the previous year, so that previous-year employment is represented as if the firm then had its current structure. The industry to which the firm is assigned is its dominant industry in the final year.

Although LEAP covers all industries in the economy, this study excludes the public or non-business sector. Organizations in this sector are not necessarily profit-maximizing, so their employment dynamics are expected to differ from those of firms in the private sector.[2]

Firms are grouped into one of six employment dynamics categories: births, re-entries, growing, stable, declining, and exits. Labour market entrants are classified as births if no employment history can be found for any of their constituent parts. Re-entries are firms without employment

1. The LEAP file cannot determine how much growth was due to the acquisition of parts of other firms or the divestiture of parts of firms—only the acquisitions or divestitures of complete firms.
2. The North American Industry Classification System codes excluded are 5211, 6111 to 6113, 6211, 6214, 6219, 6221 to 6244, 8131 to 8141, 9111 to 9191.

in the previous year, but with employment at some point in the past. Growing, stable and declining firms are continuing firms with employees in both the previous and current year. They are classified based on whether their workforce grew, remained stable or declined between these two years: a) 1 ALU or more for growing firms; b) between -1 and 1 ALU for stable firms; and c) -1 ALU or less for declining firms. Exits are firms with employment in the previous year, but none in the current year.

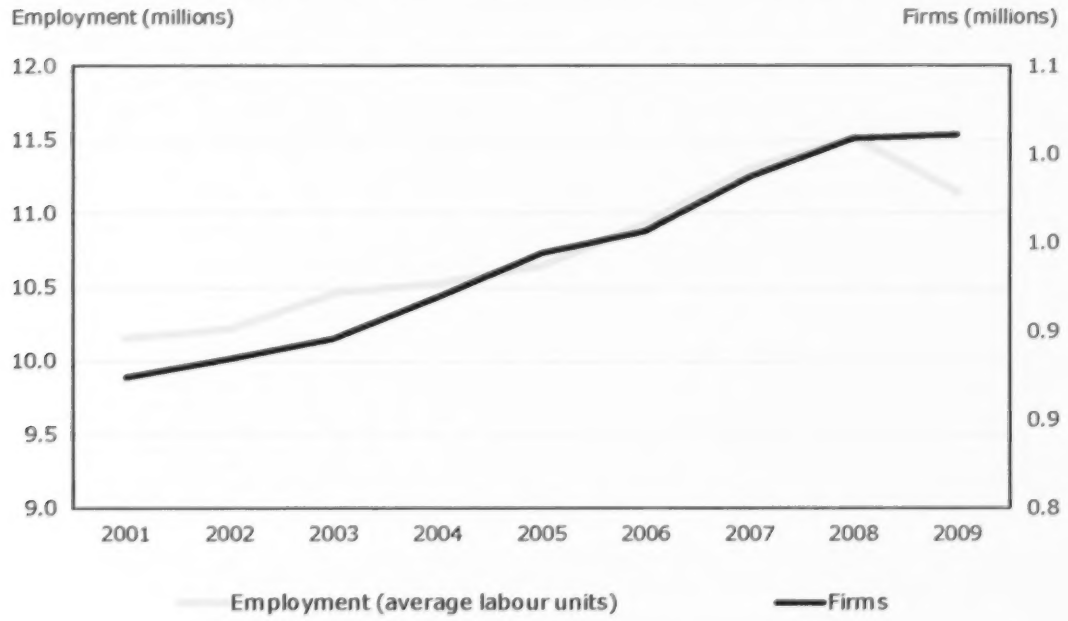
When distributions of firm size for a given year are examined, firm size in that year (the final year) is used. However, when employment change by firm size is studied, the average of the size of the firm in the previous and final year is used. This method, known as mean-sizing, has desirable properties compared with base-sizing and end-sizing (Okolie 2004).

3 Analysis

Over the 2001-to-2008 period, total employment increased every year at an average rate of 1.8%. However, in 2009, as a consequence of the global financial crisis, the Canadian business sector employed approximately 369,000 fewer individuals than in 2008, a 3.2% drop (Chart 1). The number of firms rose between 2001 and 2009, an overall increase of 15.7%. Even in 2009, while employment declined, the number of firms continued to grow, albeit more moderately than in the previous years, and as a result, average firm size decreased (Table 1). Average firm size had also fallen between 2001 and 2008, but this was because the number of firms rose faster (15.5%) than employment (13.5%).

Chart 1

Number of firms and employment in business sector, 2001 to 2009



Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Table 1

Average size of all firms, births and exits, 2001 to 2009

Year	Employment		
	All firms	Births	Exits
	average labour units		
2001	11.59	2.23	2.52
2002	12.14	2.27	2.39
2003	12.12	2.18	2.14
2004	11.56	1.89	1.52
2005	11.38	1.79	1.37
2006	11.40	2.06	1.56
2007	11.47	1.42	1.45
2008	11.38	1.52	1.41
2009	11.00	1.38	1.52

Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

3.1 Employment creation and destruction

Net employment growth is the outcome of gross employment creation and destruction—employment created by births and growing firms, and employment destroyed by exiting and declining firms. The net change in total employment masks considerable churning in the economy, as firms appear, disappear, grow and decline.

Consistent with the literature, rates of gross employment creation and destruction in Canada during this period were well above rates of net employment growth (Chart 2, Table 2). For example, net employment growth of 1.4% in 2001 was the result of a 13.5% gain of employment in births and growing firms, and a 12.1% loss of employment in declining and exiting firms. However, during the 2001-to-2008 expansion, gross employment creation and destruction both trended downward.[3]

Year-on-year variations reveal whether net changes arise from the creation or destruction side of the economy, or from both. For example, the net decrease in 2004 was solely attributable to a slowdown in employment creation, because employment destruction edged down. Between 2005 and 2007, however, lower employment destruction led the net increase.

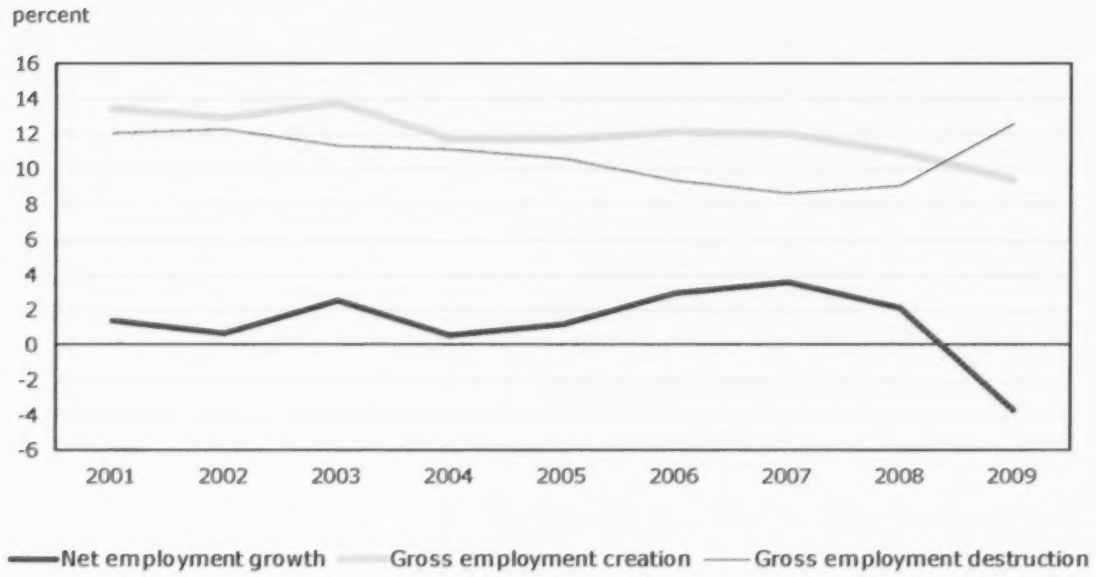
The impact of recessions tends to be greater on gross employment destruction than on gross employment creation. During the 2008/2009 recession, the increase in the employment destruction rate (+3.2 percentage points) exceeded the decrease in the employment creation rate (-1.9 percentage points).[4]

Gross employment destruction was higher in 2009 than in any of the previous years of the period. Exiting and declining firms accounted for more employment change (-1.4 million) that year than did births and expanding firms (+1.1 million). Net employment growth was, therefore, negative for the first time in the decade—a net employment loss of 369,000.

3. The downward trend in job destruction is consistent with the decrease in permanent layoff rates observed by Morissette *et al.* (2011).
4. The United States experienced an unprecedented reduction in job creation during the 2008/2009 recession, along with the usual upsurge in job destruction (Haltiwanger *et al.* 2011).

Chart 2

Annual employment flows in percentage terms, 2001 to 2009



Note: The denominator is the average employment in the previous and current year.
Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Table 2

Annual employment flows in percentage terms, 2001 to 2009

	Net employment growth	Gross employment creation	Gross employment destruction	Employment reallocation	Excess employment reallocation
			percent		
2001	1.4	13.5	12.1	25.7	24.3
2002	0.7	13.0	12.3	25.3	24.6
2003	2.5	13.8	11.4	25.3	22.8
2004	0.6	11.7	11.1	22.7	22.1
2005	1.2	11.7	10.6	22.4	21.2
2006	2.9	12.1	9.4	21.5	18.6
2007	3.6	12.0	8.7	20.7	17.1
2008	2.1	11.0	9.1	20.1	18.0
Average, 2001 to 2008	1.9	12.3	10.6	22.9	21.1
2009	-3.7	9.4	12.6	22.0	18.4

Note: The denominator is the average employment in the previous and current years.
Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

3.2 Employment reallocation and churning

The rate of employment reallocation is the sum of the rates of gross employment creation and destruction. During the 2001-to-2008 expansion, the employment reallocation rate declined steadily from 25.7% to 20.1% (Table 2). In other words, less labour restructuring took place toward the end of the expansion: one in four jobs was either created or destroyed in 2001, compared with one in five jobs in 2008. A similar trend has been observed in the United States over the last three decades (Haltiwanger *et al.* 2011).

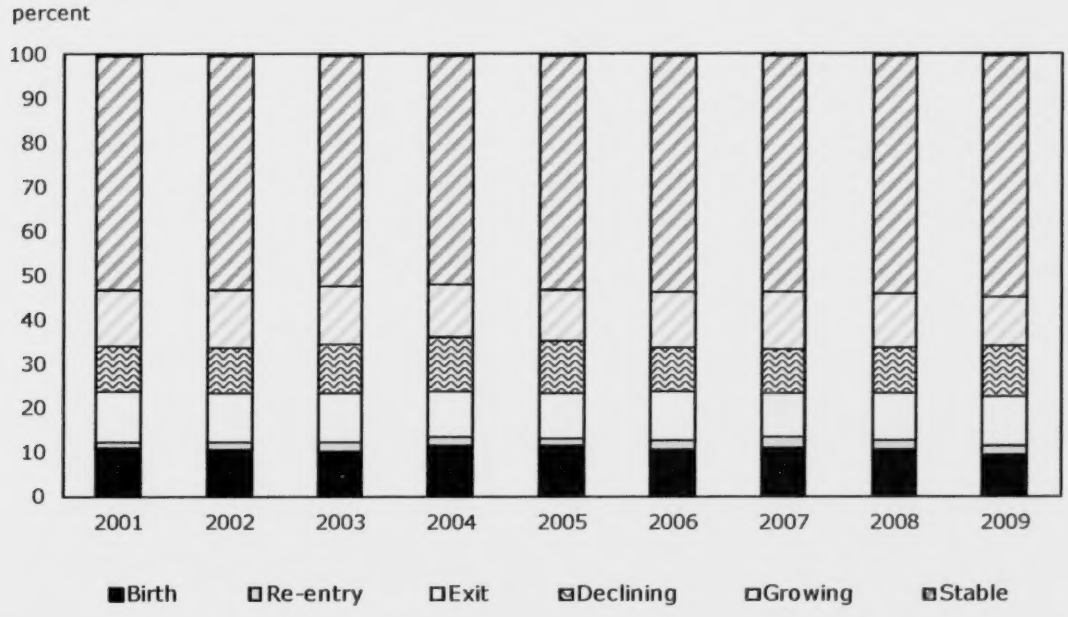
Excess employment reallocation is the rearrangement that occurs beyond that explained by net employment growth alone. It is a measure of gross churning in the labour market, and is calculated by subtracting the net growth rate from the employment reallocation rate (Davis *et al.* 1996). A downturn in excess employment reallocation during the expansion ended in 2007.

3.3 The role of continuing firms

From 2001 to 2009, the percentage distribution of firms across the six employment dynamics categories generally remained the same (Chart 3). On average, 53% of firms were stable—their employment changed by less than one ALU year-on-year. Births, exits, declining firms and growing firms each represented about 11% of the firm population. The remaining 2% were re-entries.

Firm births and exits accounted for relatively small shares of employment creation and employment destruction, respectively. On average, during the period, 16% of employment creation was attributable to firm births (Chart 4), and 17% of employment destruction was attributable to firm exits (Chart 5). These percentages are well below the 30% to 40% range observed by Haltiwanger *et al.* (2010) in 16 developed and emerging economies. Part of the difference may reflect how employment is measured.[5]

Chart 3
Percentage distribution of firms, by employment dynamics category, 2001 to 2009

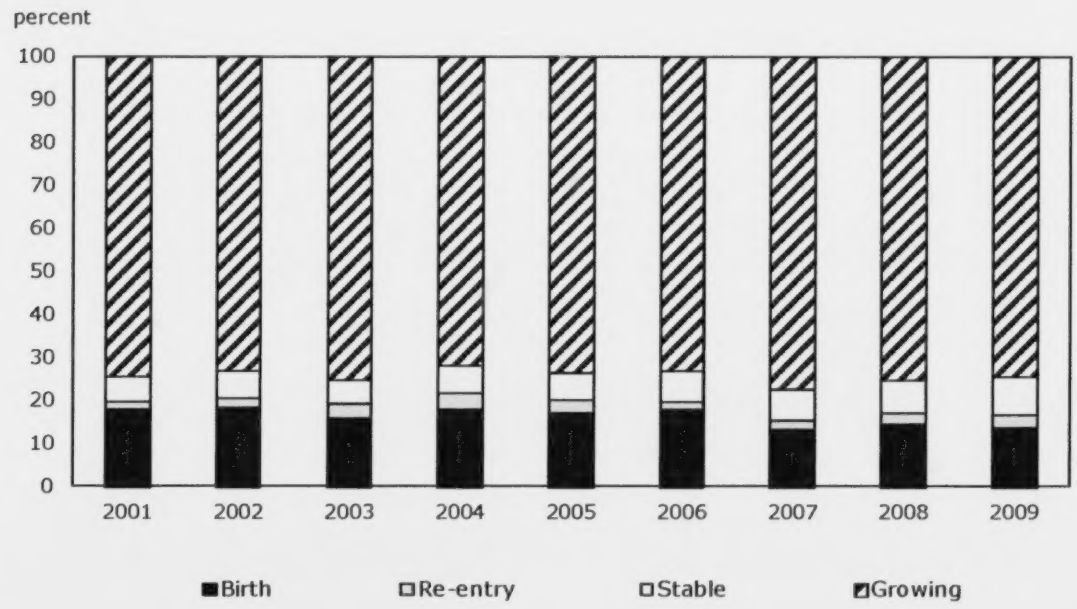


Note: The denominator includes all firms contributing to employment dynamics, namely, firms with employment in either the previous or current year.
Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

5. The ALU measure underestimates the employment of firms that are active only part of the year. This data limitation is potentially more important for start-ups created at the end of a calendar year, and for exits occurring in the first months of the year.

Chart 4

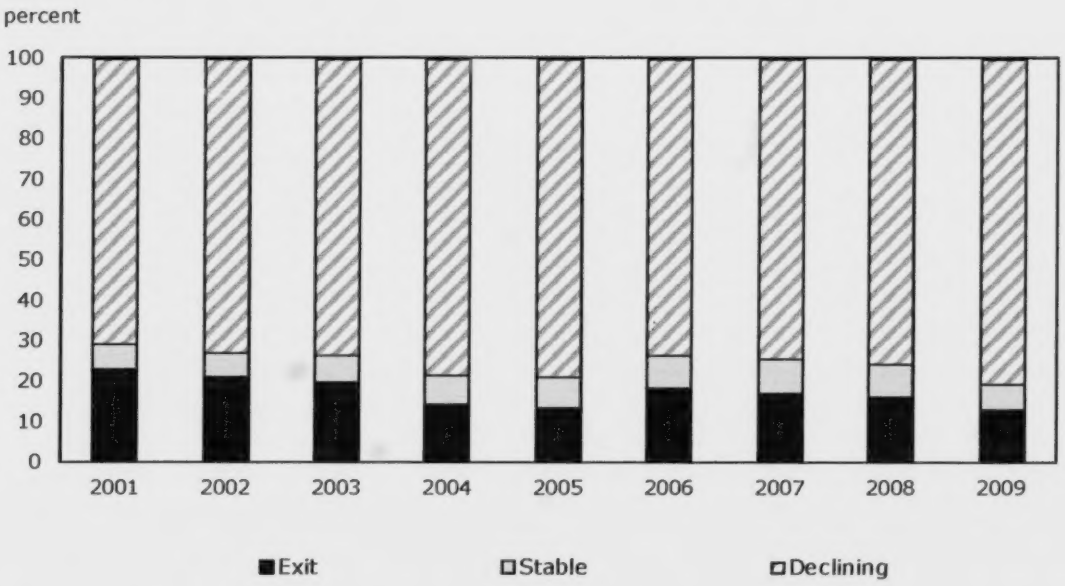
Share of gross employment creation, by employment dynamics category, 2001 to 2009



Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Chart 5

Share of gross employment destruction, by employment dynamics category, 2001 to 2009



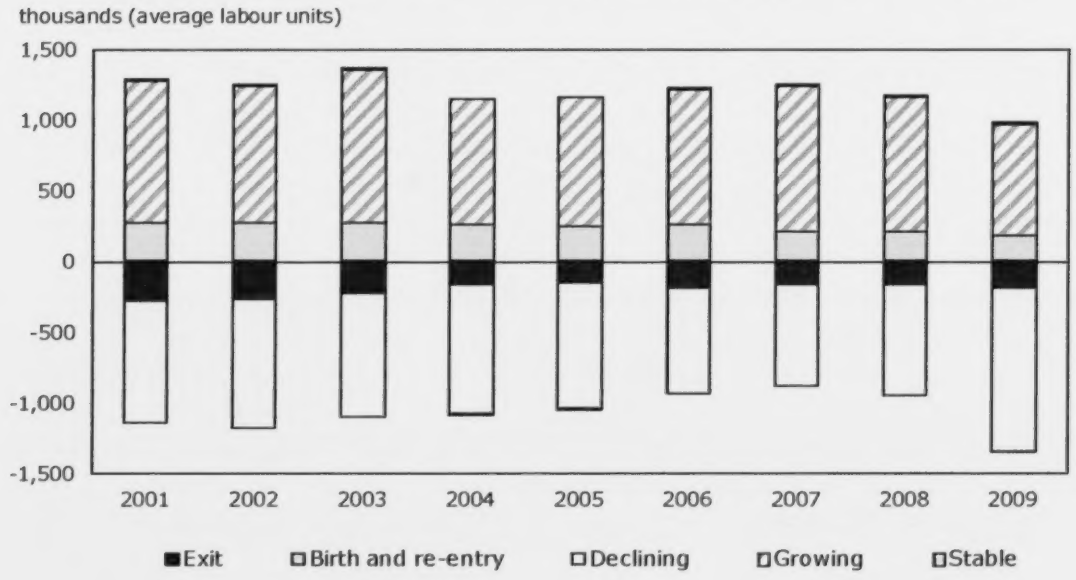
Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Between 2001 and 2009, the employment created by firm births and the employment destroyed by firm exits trended down (Chart 6). This is partly explained by the fact that the average size of both births and exits declined (Table 1; Ciobanu and Wang 2012). And near the end of the period, the contributions of births to gross employment creation and exits to gross employment destruction were even smaller than in preceding years.

As a result, the importance of continuing firms to both gross and net employment flows increased over time. Continuing firms were largely responsible for the churning that occurred, accounting for more employment creation and destruction than did births and exits. In fact, continuing firms contributed more to net employment growth than did births, re-entries and exits combined every year except 2004 and 2005 (Chart 7).

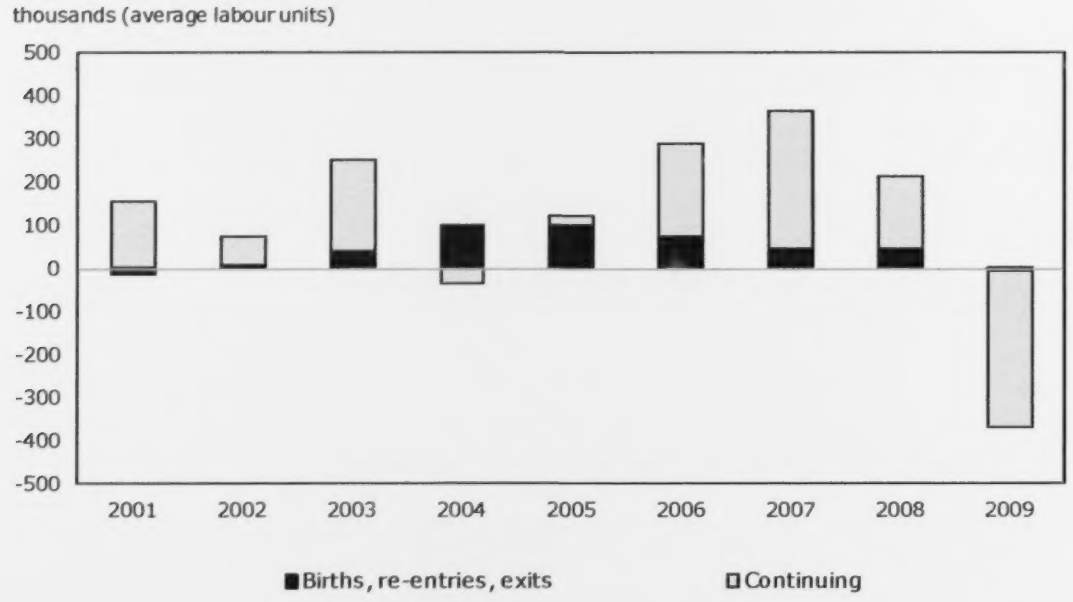
Chart 6

Net employment growth, by employment dynamics category, 2001 to 2009



Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Chart 7
Net employment growth, by broad employment dynamics category, 2001 to 2009



Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Thus, continuing firms bore the brunt of adaptation during the 2001-to-2008 expansion and the 2008/2009 recession. For the most part, the decrease in employment during the recession was attributable to firms that reduced their workforce but did not go out of business. The probability of being laid off during the 2008/2009 recession was less than during the recessions in the early 1980s and 1990s (Chan *et al.* 2011), as employers relied more on shorter workweeks and less on job cuts than they had in the past (Cross 2011). This is consistent with the modest role in employment destruction shown here for exiting firms, since employment lost as a result of firm shutdowns are more likely to be permanent layoffs.

3.4 Sector and subsector analysis

Over the decade, employment dynamics in the goods sector and in the services sector differed. The goods sector was a net employment destroyer in four years, but this was the case for the services sector only in 2009 (Chart 8). Not surprisingly, then, the services sector accounted for most of the annual net employment growth during the 2001-to-2008 expansion.

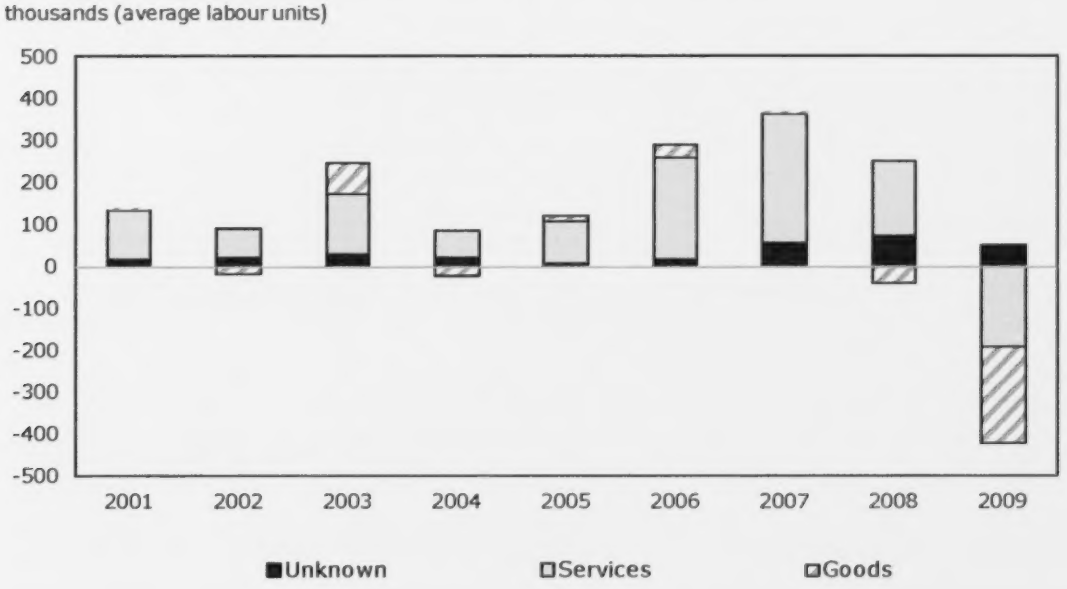
On the other hand, although fewer than a third of workers were employed in the goods sector, more than half of the 2009 net employment loss occurred in this sector. By 2009, share of employment in the goods sector was 26%, down from 31% in 2001 (Chart 9).

Net employment growth also differed across the five subgroups of the goods sector (Chart 10). The durable and non-durable manufacturing subsectors and the agriculture, forestry, fishing and hunting subsector tended to be net employment destroyers during the expansion. The two other subsectors—construction and utilities, and mining, oil and gas extraction—tended to be net employment creators. In 2009, however, all five subsectors had a net employment loss. Together, durable and non-durable manufacturing had a net employment loss of 162,600 that year, or 44% of the total net employment loss.

Almost all services subsectors were net employment creators during the expansion (Chart 11). However, in 2009, only two—the education and health services subsector and the arts, entertainment, recreation, accommodation and food services subsector—created more employment than they destroyed. The trades and related services and the professional services subsectors each contributed about a quarter of the total net employment loss recorded in 2009.

Chart 8

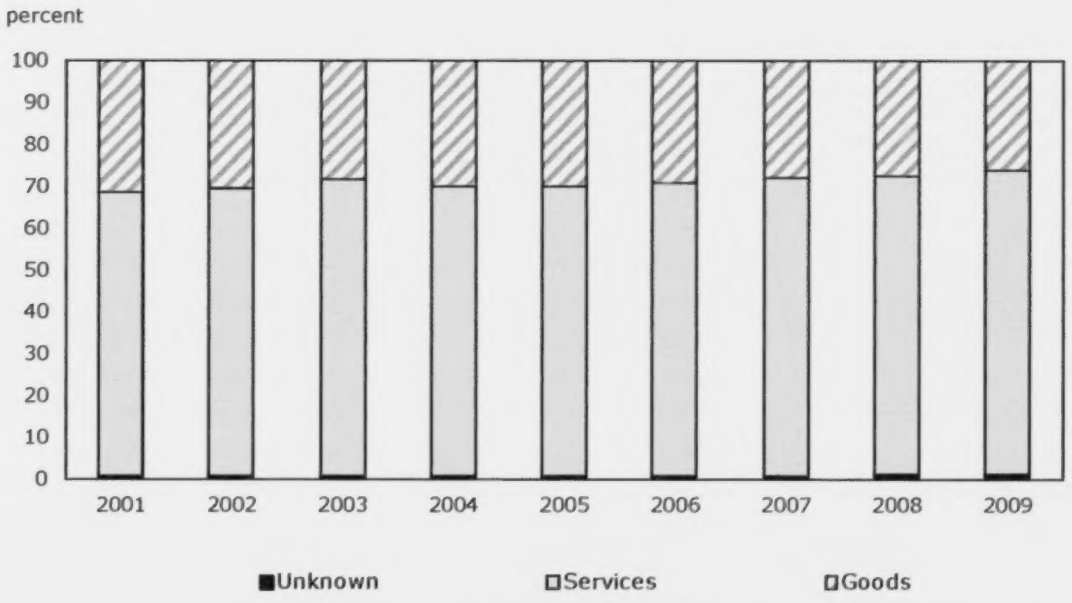
Net employment growth, by industry sector, 2001 to 2009



Note: Because some firms in the LEAP file do not have an industry classification, they cannot be assigned to the goods or services sector. These firms tend to be births for which industry information has yet to be gathered. Since births are, by definition, employment creators, net employment growth for the "unknown" group is positive every year.

Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

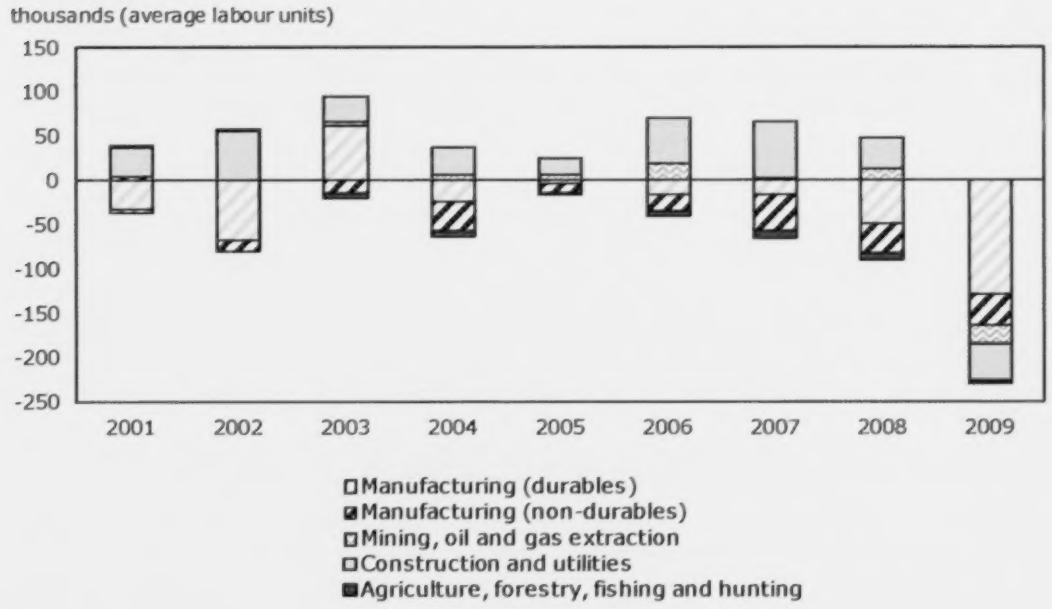
Chart 9
Employment share, by industry sector, 2001 to 2009



Note: Because some firms in the LEAP file do not have an industry classification, they cannot be assigned to the goods or services sector. These firms tend to be births for which industry information has yet to be gathered.
Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Chart 10

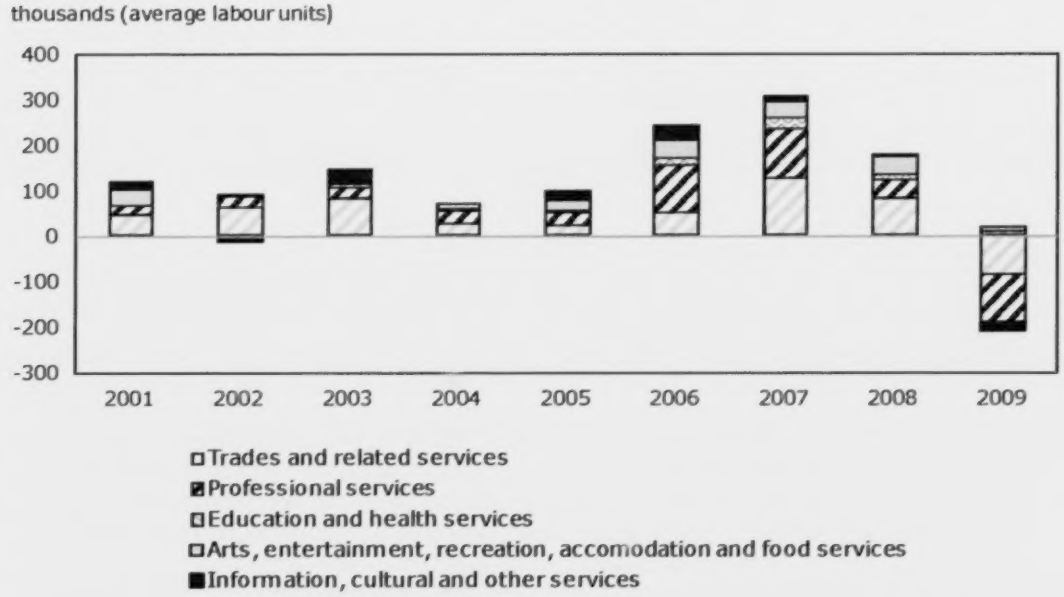
Net employment growth in the goods sector, by industry subsector, 2001 to 2009



Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Chart 11

Net employment growth in the services sector, by industry subsector, 2001 to 2009



Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

The goods and services sectors differed in the relative amounts of employment creation and destruction that took place during the 2001-to-2008 expansion (Table 3). The two sectors had similar levels of employment creation, but the employment destruction rate was 1.6 percentage points higher in the goods sector. Gross employment creation in the goods sector averaged 11.7%, but gross employment destruction averaged 11.5%, yielding net employment growth of 0.2%. In the services sector, gross employment creation of 11.9% and gross employment destruction of 9.9% yielded net employment growth of 2.0%. Thus, the difference between the sectors in net employment growth did not stem from less employment creation, but from differences in the rates of employment destruction.

Subsectors that grew during the expansion generally had higher rates of employment creation, and subsectors that declined, higher rates of employment destruction. However, the agriculture, forestry, fishing and hunting subsector and the information, cultural and other services subsector simultaneously had high rates of employment creation and destruction. As a consequence, these two subsectors' average employment reallocation rate surpassed 25%.

During the recession, most declining subsectors experienced a slowdown in employment creation and an intensification of employment destruction. In the mining, oil and gas extraction subsector, the employment destruction rate was more than 20%, that is, a fifth of the employment in this subsector disappeared between 2008 and 2009. The agriculture, forestry, fishing and hunting subsector was the only subsector in which employment creation increased during the recession.

Table 3
Employment flows, by industry sector and subsector, 2001 to 2009

Sector or subsector	2001-to-2008 expansion (average)						2008/2009 recession					
	Employment share	Net employment growth	Gross employment creation	Gross employment destruction	Employment reallocation	Excess employment reallocation	Employment share	Net employment growth	Gross employment creation	Gross employment destruction	Employment reallocation	Excess employment reallocation
						percent						
Manufacturing (durables)	10.7	-1.6	10.2	11.8	22.0	19.0	8.1	-13.5	4.7	18.2	23.0	9.5
Manufacturing (non-durables)	7.5	-2.5	8.2	10.7	19.0	16.4	6.1	-4.8	7.7	12.5	20.1	15.3
Mining, oil and gas extraction	1.7	3.6	13.9	10.3	24.1	19.9	1.7	-10.5	10.6	21.1	31.6	21.1
Construction and utilities	7.8	4.7	16.1	11.4	27.5	22.8	8.6	-4.1	11.0	15.2	26.2	22.1
Agriculture, forestry, fishing and hunting	1.7	-1.8	13.0	14.8	27.8	25.3	1.5	-2.8	13.6	16.4	29.9	27.1
Goods sector	29.4	0.2	11.7	11.5	23.2	22.3	26.0	-7.6	8.4	16.0	24.4	16.7
Trades and related services	29.0	2.0	10.3	8.3	18.6	16.6	29.7	-2.6	7.4	10.0	17.4	14.8
Professional services	21.4	1.9	12.8	10.9	23.7	21.8	23.2	-3.9	9.8	13.7	23.5	19.6
Education and health services	2.1	3.8	15.0	11.2	26.2	22.4	2.5	2.8	11.2	8.3	19.5	16.7
Arts, entertainment, recreation, accommodation and food services	11.2	1.8	12.6	10.8	23.5	21.5	11.9	0.7	11.2	10.5	21.8	21.1
Information, cultural and other services	6.1	2.2	14.5	12.3	26.9	24.1	5.8	-2.7	9.1	11.8	20.9	18.3
Services sector	69.9	2.0	11.9	9.9	21.9	19.9	73.0	-2.3	9.0	11.4	20.4	18.1

Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

3.5 Firm size

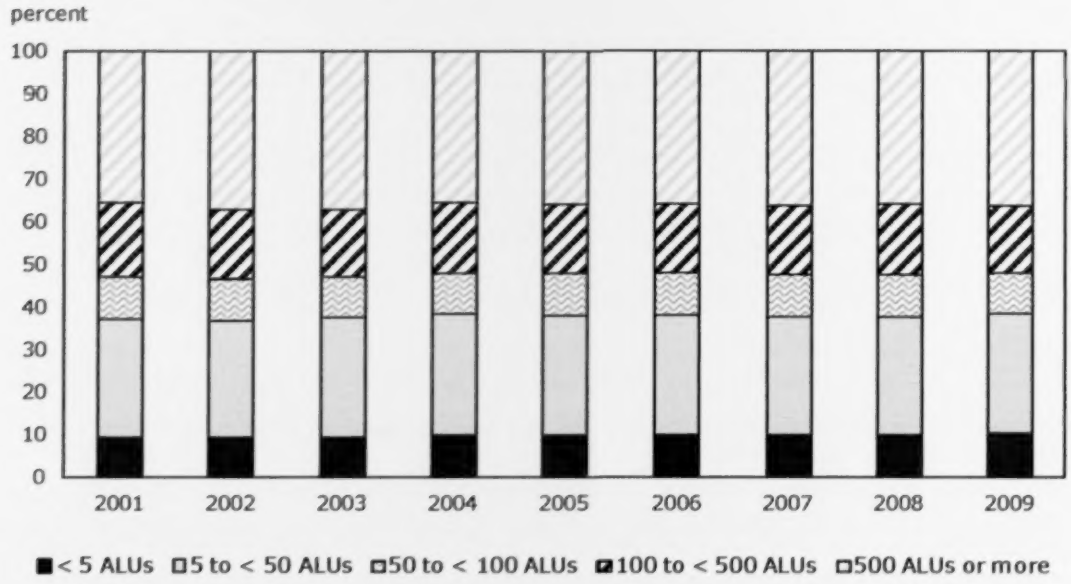
The distribution of employment by firm size was relatively stable over the period (Chart 12). The most noticeable change was a 1.5 percentage-point increase in the share of employment in firms with fewer than 50 employees (38.4% in 2009, compared with 36.9% in 2001). This growth was at the expense of medium-sized firms (100 to 499 employees). Firms with 500 or more employees accounted for a relatively stable 36% of employment throughout the period.

Generalizations are sometimes made about the extent to which one or other size class (e.g., small firms) are the locus of most employment creation. The contribution of firms of different sizes to net employment growth changed substantially from year to year (Chart 13). Firms with 500 or more employees were net employment losers four times: in 2001, 2002, 2004, and 2009; in fact, this class size accounted for 50% of the net employment decline in 2009. By contrast, these large firms contributed significantly to employment growth in 2003, 2006, 2007 and 2008. Micro-firms (fewer than five employees) were responsible for an average net employment gain of 41,000 every year during the 2001-to-2008 expansion. Although the absolute net contribution in micro-firms was relatively unchanged, the annual share of net employment growth in these firms varied considerably, depending on what was happening in larger firms.

Employment flows by firm size provide further detail on the nature of change (Table 4). During the 2001-to-2008 expansion, the net employment growth rate was around 2.0% in the three intermediate groups (5 to less than 50 ALUs, 50 to less than 100 ALUs, and 100 to less than 500 ALUs). Net employment growth was significantly higher only for micro-firms. The other employment flow rates—employment creation, employment destruction, employment reallocation and excess employment reallocation—declined with firm size. Consistent with other countries, during both the expansion and recession, a smaller percentage of employment in firms with 500 or more employees was created or destroyed annually (Haltiwanger *et al.* 2010).

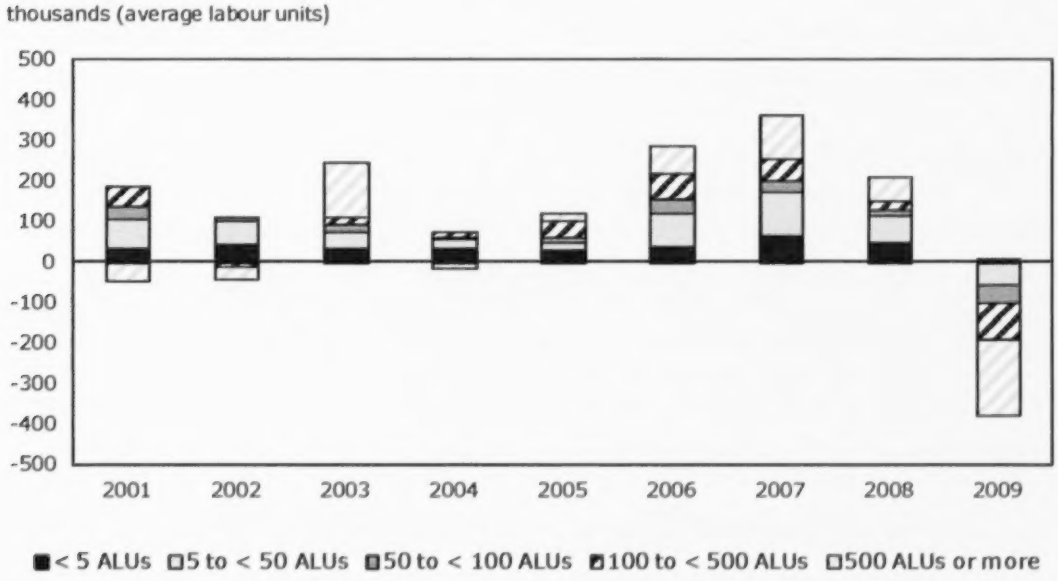
Chart 12

Employment share, by firm size, 2001 to 2009



Note: ALU = average labour unit.
Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Chart 13
Net employment growth, by firm size, 2001 to 2009



Note: ALU = average labour unit.
Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

Table 4
Employment flows, by firm size, 2001 to 2009

Employment (average labour units)	2001-to-2008 expansion (average)						2008/2009 recession					
	Employment share	Net employment growth	Gross employment creation	Gross employment destruction	Employment reallocation	Excess employment reallocation	Employment share	Net employment growth	Gross employment creation	Gross employment destruction	Employment reallocation	Excess employment reallocation
						percent						
Less than 5	9.5	4.2	31.8	27.5	59.3	55.1	9.9	0.7	26.2	25.5	51.7	51.0
5 to less than 50	28.0	2.0	14.3	12.3	26.7	24.7	28.4	-1.7	10.8	12.5	23.3	21.6
50 to less than 100	9.7	1.8	11.5	9.6	21.1	19.3	9.4	-4.3	7.2	11.4	18.6	14.3
100 to less than 500	16.6	1.9	11.6	9.7	21.3	19.3	15.7	-5.1	6.9	11.9	18.8	13.7
500 or more	36.2	0.9	6.9	6.0	12.9	11.4	36.6	-4.5	5.4	9.9	15.3	10.8

Source: Statistics Canada, Longitudinal Employment Analysis Program, 2001 to 2009.

4 Conclusion

Net change in employment, the summary statistics that garners attention, is the outcome of substantial reallocation and churning of employment as some firms grow and others decline.

Some of these underlying processes are endemic to the economy; some are caused by idiosyncratic structural changes in a specific period; and others are the results of shocks like the 2008/2009 worldwide financial crisis. Disentangling the three is difficult, particularly in an analysis such as this that covers only a decade and only one recession.

Nonetheless, a number of conclusions emerge from this analysis. Overall, the characteristics of employment flows in Canada conform with those observed in the United States and in other countries.

Rates of employment creation and destruction were considerably higher than net employment growth. Total employment varied by less than 4% each year, but employment creation and destruction rates both exceeded 8%.

Employment destruction was more sensitive to trends in the business cycle than was employment creation. Employment destruction declined steadily during the expansion (from 12.1% in 2001 to 9.1% in 2008), and rose sharply during the recession (to 12.6%).

Rates of employment creation, destruction and reallocation decreased with firm size. Each year, on average, firms with 500 or more employees created and destroyed fewer than 10% of their employment, while firms with fewer than 5 employees created and destroyed more than 25%.

A number of the post-2000 trends observed in Canada may reflect structural changes, although research is needed to address the issues in more depth.

First, the downturn in employment creation, destruction and reallocation, which is similar to trends in the United States, suggests greater stability in North American labour markets toward the end of the decade.

Second, the contribution of firm births and exits to employment creation and destruction diminished so that by the end of the decade, births accounted for 14% of employment creation, and exits, 13% of employment destruction. This places Canada well below the 30% to 40% range observed in other countries, but how much of this reflects differences in data and definitions needs further study.

Third, large firms appeared to be especially susceptible to economic fluctuations. This, however, may be specific to the post-2000 period, which saw substantial appreciation of the Canadian exchange rate and a resulting decline in export intensity that affected large manufacturing firms in particular.

Fourth, the 1.5 percentage-point rise in small firms' share of employment at the expense of medium-sized firms may be the result of exogenous events that increased the importance of the services sector relative to the goods sector rather than an inherent advantage of small firms per

se. It also may be the result of adaptation of the manufacturing sector to the appreciation in the exchange rate.

And fifth, the decline in average firm size over the last decade may be associated with the decline in the goods sector and the corresponding growth in the services sector.

Several features of the 2008/2009 recession emerge from this analysis. The contribution of firm shutdowns to the recession was minor: exits accounted for less than 15% of recessionary employment destruction; declining firms accounted for more than 80%. In fact, during the recession, the number of firms did not decrease, but remained stable. The goods sector was hard-hit, suffering a net loss of 7.6% of its employment; the corresponding figure for the services sector was 2.3%.

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